Firm size and the political cycle premium

1. Introduction

When governments reflect their constituencies' views, right-leaning governments typically support policies that favour the business community, whilst left-leaning governments should support policies that favour full employment and improving worker conditions. Given the trade-off between unemployment and inflation, these preferences will tend to result in differences in the relative levels of wages, inflation and unemployment during the respective political regimes (Phillips, 1958; Mankiw, 2001). A number of studies have illustrated that the political cycle has impacts on inflation levels, including Hibbs (1977) and Anderson, Malone, and Marshall (2008).

It follows that stock prices can also be influenced by the political cycle as stock prices are the result of a discounting mechanism where inflation is an integral part of the valuation process. Fama and Schwert (1977) for instance, show an inverse relationship exists between inflation and stock prices in the short run. They explain that inflation increases interest rates, the cost of capital, and wages, and erodes the present value of planned profits and income streams. Further, Pastor and Veronesi (2012, 2013) argue that governments who "set the rules of the game" though for instance taxes, subsidies and regulation can and do "change these rules from time to time" (2012, p.1219). Changes to the rules of the game result in varying magnitude of financial market price reactions depending on whether the change is widely anticipated or not. New Zealand's recent political history provides an almost perfect test of this statement given the country's unanticipated and massive deregulation and reforms of the business environment in 1984. Another feature of the literature that we draw on is that small firms, in particular, are shown to be more sensitive to changes in the competitive environment and changing macroeconomic conditions such as movements in inflation (Ang, Brie`re, and Signori, 2012) and monetary conditions (Maio, 2013).

This study seeks to examine how the political cycle differentially relates to small versus large firms using New Zealand listed data from 1972 - 2010. To the authors' knowledge, no firm level study has been completed outside of the U.S. where a left-of-centre stock premium 'puzzle' prevails. New Zealand is an excellent candidate to re-examine the political cycle and firm size as it has a clearly defined left-of-centre (Labour) versus right-of-centre (National) political divide with stable yet reasonably frequent changes in government due to the country's three year electoral term. New Zealand is also a useful candidate as unlike the U.S., prior evidence suggests a right-of-centre premium in the New Zealand stock market (Cahan, Malone, Powell, and Wongchoti, 2005; Anderson, Malone, and Marshall, 2008). The country also has a unicameral political system which gives considerable power to the political party that forms the government.

We find a right-of-centre premium exists in New Zealand and that this is primarily driven by significantly poorer small firm performance under left-leaning Labour governments. Next, we attempt to explain why smaller firms performed as they did by looking at their sensitivity to market conditions, inflationary/deflationary environments, credit conditions, and to competitive deregulatory pressures. We also perform tests to see if the results are specific to a particular term of office, industry sector, or period of time, as well as examining the links between the political cycle and shifts in risk. The results from the analysis show the principal explanations for poor small firm performance during left-of-centre governments include market underperformance, periods of falling inflation, harsh default-risk and credit conditions and the introduction of deregulation in 1984 that opened up firms to increased foreign competition and exchange rate pressures.

The rest of this paper proceeds as follows: the next section provides the background to New Zealand's electoral cycle story and discusses the literature. In section three we lay out the data and methodology, and present the results. In section four we conclude.

2. Background and literature

New Zealand had its first election as an independent nation in 1853 and the early elections were initially contested by independent candidates. The antecedents for the right-of-centre National party made its first showing in the 1893 election. The left-of-centre Labour party had its first election showing in the 1919 election, and Labour first took office in the 1935 election. Since then these two main parties have contested for the government of the country.[1] In terms of the period from 1972, when our database on individual firms listed on the New Zealand market starts, there have been 13 governments, made up of six Labour governments and seven National governments.[2]

In the US, where the majority of the literature is focused, studies show that, if anything, there is a stock market premium associated with left-of-centre governments. Niederhoffer, Gibbs and Bullock (1970) examine the period from 1900 to 1968 and did not find support for the traditional Wall Street view that the stock market prefers Republicans. Riley and Luksetich (1980) took an event study approach to the question of the stock market's political preference and report that at least in the short-run the stock market reacts positively to the election of a Republican president and negatively to a Democrat president. Santa-Clara and Valkanov (2003), in a seminal paper, find a mean 9.0 percent per year Democrat party share market premium over and above the mean returns experienced under Republican presidencies for the period from 1927 to 1998. They further show that the premium is mainly driven by small capitalization stocks with a 12.3 percent Democrat premium per year, compared to a 1.7 percent annual premium for the largest capitalization stocks. A number of other studies such as Hensel and Ziemba (1995) and Johnson, Chittenden, and Jensen (1999) confirm that the Democrat effect is primarily driven by small capitalization stocks.

The Santa-Clara and Valkanov (2003) results are controversial and a number of studies dispute the findings. Campbell and Li (2004) re-examine the data with weighted least squares and GARCH

[1] New Zealand generally has a three-year election term and has had 50 elections by 2011.
[2] Mixed Member Proportional replaced the First Past the Post electoral system in 1996 but this has not changed the dominant left-of-centre and right-of-centre feature of the system.

methods, rather than ordinary least squares regression, and find the return premiums for large- and small-capitalization stocks are narrower and less significant than Santa-Clara and Valkonov's (2003) findings. Powell, Shi, Smith and Whaley (2007) re-examine the presidential puzzle over a period extending from 1857 to 2004. After controlling for spurious regression bias they find no significant difference in stock returns under the two parties' governments. Others that dispute, or qualify, the U.S. presidential puzzle include Stovall (1992), Beyer, Jensen, and Johnson (2004), Li and Born (2006), Stangl and Jacobsen (2007), Chen, Estes, and Richey (2008) and Sy and Zaman (2011). In a study that we draw methodology from for our study, Sy and Zaman (2011) provide a risk-based explanation for this presidential puzzle. They use a conditional version of the CAPM which allows for different systematic risks over time. They find that systematic risk varies across political cycles and the presidential puzzle is explained by a combination of firm size and risk premia analysis.

In other countries, there is a diversity of findings in relation to the political cycle effect. In the UK, Hudson, Keasey, and Dempsey (1998) examine the post-world war II period and find similar results to the New Zealand experience where the stock market appears to favour right-of-centre governments. Dopke and Pierdzioch (2006) using data from 1977 to 2003 and a VAR-based approach produced analysis that shows weak evidence that the German stock market prefers a right-wing government. Worthington (2009) shows there is a premium attached to right-of-centre governments in Australia using a GARCH based approach but the difference is not significant.

Several studies have examined the relationship between left- and right-wing governments in New Zealand and stock market performance. Cahan, et al., (2005) studied the period from 1931 to 2003 and find lower stock returns and higher return volatility when the Labour party (centre-left) is in office compared to National party governments (centre-right). Anderson, et al., (2008) examined political cycles and the impacts on stock, property, and bond markets performances between 1931 and 2005 in New Zealand (and in Australia between 1910 and 2005). They find mean stock and bond market returns are higher during centre-right governments, whereas property market mean returns are higher under

centre-left parties. They link these results to differences in the rates of inflation, with mean inflation being lower during centre-right governments.

In summary, it is clear from a review of the literature that the left-of-centre effect identified in Santa Clara and Valkanov (2003) is not a global phenomenon. However, a feature of the non-U.S. based research is its use of aggregate market index data. In fact, to the authors' knowledge this paper is one of the first studies outside of the U.S. to examine political cycle premium using firm, rather than index level data. This distinction is important, for if the political cycle is primarily reflected in small firms then studies that use value weighted stock market indices, particularly if the indices are compiled from only the top capitalization stocks, will struggle to detect an effect.

3. Data, Variables, Models and Results

New Zealand's election dates and results are downloaded from the www.elections.org.nz website. The entire 1972 to 2010 sample period comprises of 456 data months of which 238 months are during right-of-centre National governments and 218 months are during left-of-centre Labour governments. Firm monthly total return index (TRI) series (adjusted for dividends and capital issue adjustments) are sourced from Datastream for the period February 1986 to December 2010. The TRI for each stock is a price relative index. For the December 1972 to January 1986 period, or wherever Datastream has gaps, firm monthly total return index series are constructed from The Dominion newspaper monthly stock price summaries from microfiche while dividends and capital issues are extracted from the NZSE Stock Exchange annual reports. Outliers and apparent anomalies are cross-checked against other sources including The Herald newspaper, New Zealand Investment Yearbooks, and weekly NZSE Stock Exchange Diaries.

We calculate monthly percentage stock returns, $r_{t(pct)}$ as follows:

$$r_{t\,(pct)} = TRI_t / TRI_{t-1} - 1 \qquad (1)$$

In addition we calculate $r_{t,}$ the natural logarithm of the movement in the total return index (TRI) of a firm over a given month:

$$r_t = ln\ (TRI_t / TRI_{t-1}) \quad (1a)$$

Raw percentage returns have the advantage of being more consistent with investor experience and how investors perceive returns.[3] Alternatively, the distributional properties of the logarithmic based method are more statistically appropriate for inference testing as the approach helps remove skewness in stock returns distributions. However, the logarithmic based method has the disadvantage that if a series has a lot of extreme downside events within it, as the smaller firm sample in this study does, then the statistics can be affected. Hence where appropriate, we report both to provide further insight into the pattern of returns.

We classify firms by size in two ways. Firms are classified as larger or smaller in any given year by, first, splitting the sample at the median capitalization for firms in that year, and designating the top half of firms by capitalization in that year as large and the bottom half as small. As a robustness check, we also split the sample based on the Fama-French (1993) small minus big (SMB) convention where the sample is split on the basis of the top and bottom 30 percent of capitalizations within the year (splitting the sample at the 30^{th} and the 70^{th} percentiles). This method removes the middle 40 percent of firms from the sample. In both approaches, we create an indicator variable for firms that satisfy the size criteria, small or large. Table 1 descriptive statistics presents size using both methods while the core results detailed in Tables 2 to 6 and Figure 1 are based on the median capitalization split.

Table 1 shows that during the sample period there are 79,889 firm-month return observations in the study, and 39,986 of these occurred during Labour governments and 39,903 were during National

[3] For example, when firms go bankrupt it records extremely large apparent losses, for instance, the log return of a -0.99 fall in price is -4.60. This feature makes mean log returns look biased towards the negative. On the other hand, a percentage return per month approach does not account for compounding and places a heavy weighting on cases where extreme upside movements occur in stocks in a given month but has the advantage that it is more consistent with investor experience. See Hudson and Gregoriou (2010) for a discussion on calculating and comparing security returns using the logarithmic and simple raw return methods.

governments. The mean raw percentage return is 2.09 percent compared to logarithmic based return was 0.53 percent per month. In Panel B, the mean raw percentage returns under National and Labour governments were 2.62 percent and 1.56 percent per month respectively. Based on the median firm size, large firms under National and Labour governments had mean returns of 2.70 percent and 2.40% percent per month respectively. Small firms experienced mean raw returns of 2.54 percent and 0.72 percent under the two governments respectively. Based on logarithmic returns, small firms under Labour produce an average -1.82 percent compared to 0.92 percent under National governments. This result highlights the fact that the small firm raw percentage returns are positively skewed. Figure 1 clearly highlights the differences in average monthly stock returns during the right-of-centre National party terms in office shown in blue compared to the left-of-centre Labour party governments shown in red. Table 1 also indicates that the volatility of returns (measured with standard deviation) was higher during Labour governments with a standard deviation in raw percentage returns of 23.2 percent per month versus 19.4 percent under National. The same patterns occurred for larger and smaller firms when size is based on the largest and smallest 30% of firms.

Table 1 and Figure 1 here

In Table 2 we provide further summary market statistics. The peak in the number of firms listed in the sample was during the 1984-1987 term where the number of firms listed in the period totalled 378 in the sample. The mean capitalization of the firms grew substantially over the period, particularly in the 1970s and 1980s. Panel B shows a sectorial breakdown of the firms across the entire sample period.

Table 2 here

Panel A of Table 3 presents the firms' mean returns under each of the 13 governments. Notable features are the two Labour governments of the 1980s under Prime Minister Lange. In the first term from 1984-1987 the mean returns were amongst the highest in the sample, but in the second term the smaller firms experienced an astonishing mean monthly return of -1.70 percent or -7.20 percent per

month when measured using the logarithmic method. This result partly highlights the effect of extreme downside events on the logarithmic returns measure.

Panel B of Table 3 reports both raw percentage and logarithmic based returns under the two parties and t-tests the differences (National party premium). For the full sample the National party premium is significantly higher for both logarithmic and percentage based returns. The univariate statistics confirm Cahan et. al. (2005) and Anderson et. al. (2008) right-of-centre premium for New Zealand during our shorter and more recent sample period. Large firms perform significantly better under National when using logarithmic returns but only a marginally significant 0.30 percent National party premium exists for raw percentage returns. For small firms, the National party premium is evident for both percentage (1.80 percent) and logarithmic (2.80 percent) based monthly returns which are significant at the 1% level.

As noted earlier, the 1987-1990 Labour term in office was a period of severe negative returns for firms listed on the New Zealand stock exchange, and particularly so for small firms. To ensure that the 'National Party Premium' evident in the entire sample period is not simply attributable to this single term in office we rerun the analysis after excluding data during this term in office which captures the stock market crash. The results are reported in Panel C of Table 3 and show that the National party premium still exists even without the data from this period.

Panel D of Table 3 reports sub-period analysis before and after the extensive deregulation of the New Zealand economy in late 1984. The results show that stock returns were generally much higher in the earlier pre-deregulation period and this is particularly evident for small firms. This result is consistent with the Pastor and Veronesi (2012) hypothesis that unanticipated changes in government policy settings and 'rules of the game' can evoke strong reactions in financial markets. The result highlights that protectionist policies and the provision of subsidies that were readily available to firms before 1984 benefited smaller firms and that these firms were less able to adapt to the changing economic environment of the post-deregulation era than their larger counterparts.

Table 3 here

To investigate the political cycle's impact on the stock market returns, our first formal testing model is based on the Santa-Clara and Valkanov (2003) paper. We estimate the following regression models:

$$r_{t+1} = \alpha + \beta_1 N_t + \varepsilon_{t+1} \quad (2)$$

$$r_{t+1} = \alpha + \beta_1 N_t + \beta_2 r_{m,t+1} + \varepsilon_{t+1} \quad (3)$$

where r_{t+1} is the monthly raw percentage stock return at time t+1, N_t denotes the political party dummy variable that takes a value of one if a National government in the office and zero under Labour Party; $r_{m,t+1}$ is the return on a value weighted gross NZSX index sourced from Global Financial Data (GFD). The GFD New Zealand stock market index prior to 1986 is the NZSX All Share Capital Index, which comprises all domestic equity securities listed on the NZSX Market. From 1986 onwards GFD supply the NZSX 50 index, which is a gross index comprising securities from the top 50 companies listed on the NZSX by free float market capitalization. The coefficient α presents the abnormal returns when Labour is in office, β_1 is the difference of abnormal returns between the National and Labour Party (if β is positive, stocks during National Party office have higher returns, and vice versa), β_2 is the estimate of systematic risk in the firms, and ε_{t+1} is the error term. The null hypothesis is that political cycles have no impact on stock returns, that is, we expect $\beta_1 = 0$. We also use the equations to investigate the impact of political cycles on the market returns on small and large capitalization stocks.

We then extend the Santa Clara and Valkanov (2003) regression analysis with Sy and Zamam's (2011) CAPM based political cycle model which allows for varying market betas across left-of-centre and right-of-centre governments. The testing model becomes:

$$r_{t+1} = \alpha + \beta_1 N_t + (\beta_2 + \delta N_t) r_{m,t+1} + \varepsilon_{t+1} \quad (4)$$

where β_2 captures the estimate of market beta during Labour governments and δ estimates the difference in market β between right-of-centre and left-of-centre governments.

Finally we use macroeconomic variables to firstly determine whether the National party premium remains after controlling for prevailing macroeconomic conditions, and secondly to provide additional insight into the potential causes for the underperformance in small firms. The macroeconomic variables are based on Santa Clara and Valkanov (2003) and include: LogDY is the demeaned logarithm of the dividend yield on the stocks in the sample; Term_Spread is the demeaned spread between short term and long term New Zealand issued debt; Default_spread is the demeaned spread between commercial paper yields and short term New Zealand government debt yields; RRt is the demeaned relative short term interest rate measured by the difference between short term government debt yields and the 12-month rolling average yield on the same instrument. In addition, we also examine how the deregulation of the economic and financial system in 1984 under the left-of-centre government impacted on the firms' performance and how the 1987-1990 'crash' period affected small firms in particular. To illustrate this point, Table 3 Panel A shows the second Lange government (Labour) from September 1987 to December 1990 witnessed an average monthly raw returns of -0.5 percent with small firms averaging -1.7 percent per month.

The testing model becomes:

$$r_{t+1} = \alpha + \beta_1 N_t + (\beta_2 + \delta N_t) r_{m,t+1} + \Phi X_t + \varepsilon_{t+1} \quad (5)$$

where X_t is a vector of macroeconomic and environment variables as defined above.

In the analysis of each equation we employ an alternative specification which replaces the β_1 variable which measures the National party premium, with three interaction variables, namely Small*Labour, Large*Labour, and Small*National. This facilitates an analysis of the specific firm size impacts imbedded within the political cycle.

The results of these regression based analyses are reported in Table 4. In the first column we display the results for the full sample of firms to establish whether the primary effect identified in the prior literature and our univariate results holds in the firm level data. The first column of Panels' A, B and C show α values of 1.60 percent per month which represents the mean monthly firm return during Labour governments. The β_1 coefficients represent the National party premium over the Labour party and the values lie between 0.60 percent and 1.10 percent per month and all are significant. These results are consistent with the results already established in the literature that New Zealand share market data illustrates a right-of-centre premium. In the Sy and Zaman (2011) equation (4) test which accounts for variation in beta across the electoral cycle, Panel C shows the δN_t variable has a coefficient of -0.059 suggesting that the mean market beta of firms is significantly lower during right-of-centre National governments. This indicates there is a political cycle in both systematic risk and returns.

We next examine how firm size links into these results. In the second column of Panels A, B and C we include three interaction variables based on firm size and Party. In Panel A both the Small*Labour and Large*Labour interaction variables highlight significantly lower returns under Labour terms in office. However, In Panels B and C only the Small*Labour interaction variable exhibits significantly lower returns. Next we split the full sample in Small and Large firm subsamples and rerun the regression equations which are presented in the third and far right columns of Table 4.

The third column of Table 4 in Panels A, B and C shows that larger firms have mean returns under Labour of 2.40 to 2.50 percent per month. The National party premium of 0.30 percent per month is marginally significant in equation 2 (column 2 Panel A) but is insignificant in equations 3 and 4 (column 2 of Panels B and C). When we use logarithmic returns as the dependent variable, a National party premium of between 0.40 and 0.90 percent exists for equations 2 to 4 which are all significant at the 1% level[4]. The significantly negative δN_t variable indicates that the mean market beta of large firms is significantly lower during right-of-centre National governments.

[4] We also estimate equations 2 to 5 using logarithmic returns as the dependent variable. Due to space considerations we do not report these in full but are available from the authors on request.

The small firm analysis presented in the far right of Table 4 shows these firms have mean monthly returns of approximately 0.70 percent under Labour. The National party premium for small firms is between 1.40 and 1.80 percent per month and the coefficients are highly significant. The δN_t variable is negative but insignificant. However δN_t is marginally negative (t-value -2.07) in the regression equation using logarithmic returns as the dependent variable is used. This gives some support to the notion that systematic risk is lower for smaller firms during right-of-centre National governments.

Table 4 here

Panel D of Table 4 includes the additional macroeconomic variables along the lines of Santa-Clara and Valkanov (2003) to first determine whether the right-of-centre premium persists after controlling for macroeconomic conditions and secondly to tease out what conditions led to the severe underperformance of small firms in the New Zealand market. After controlling for the macroeconomic variables, the right-of-centre premium remains in the more fully specified equation (5) test.

In addition to the macroeconomic variables in Panel D, we include two additional dummies in the regressions presented in Panel E. Deregulation is to determine the impact of the market-wide deregulatory environment facing firms after 1984 and Crash controls for the extreme negative returns during the Labour term in office capturing the 1987 stock market crash. In the extended model the β_1 coefficient indicates a significantly positive right-of-centre premium persists after controlling for the macroeconomic environment in the full sample. However, for the large firms the National party premium disappears but remains for the small firms, meaning the right-of-centre premium is driven primarily by small firm (under)performance. This is also evidenced by only the Small*Labour interaction variable being significant (second column, Panels D and C). There is little additional insight in the β_2 or δN_t coefficients that differentiates small and large firms, except to say that the beta shifts (δN_t), in small firms are not significant. The LogDY coefficient is negative for both small firms and large firms. This indicates higher dividend yielding firms experienced poorer total returns.

The Term_Spread variable in Panel D has a value of 0.126 for small firms and -0.214 for larger firms indicating smaller firms performed relatively poorly when the term spread was shifting downwards, or in other words, when the economy was deflating. The rapid cut back in New Zealand's inflation rate from the 17.4 percent in 1987 to 4.3 percent in 1989 was particularly harsh on the smaller firms. After including the Deregulation and Crash dummies (Panel E) the Term_Spread coefficient remains significantly negative for larger firms but is no longer significant for smaller firms. This is consistent with the crash period dummy capturing the rapid decline in inflation during this period. In Panel E the Default_Spread variable has a value of -0.312 for small firms and -0.164 for larger firms. This indicates small firms suffered more when credit conditions worsened in the economy.

The Deregulation dummy coefficient in Panel E is negative for both larger and smaller firms indicating both large and small firms performed poorly in the post deregulation period from 1984 onwards. Finally, the Crash variable highlights that small firms were more adversely affected by the 1987 stock market crash than large firms. The Crash dummy variable is -0.013 for small firms which is significant at the 10% level, whereas the Crash dummy has a value of 0.003 for larger firms.

Sy and Zamam (2011) argue that the democratic premium 'puzzle' is at least partially explained by the systematic increase in market risk during democratic terms in office. In Table 4, Panel C we highlighted significant variation in beta across the electoral cycle with substantially lower systematic risk during the right-of-centre National led governments. This confirms the total risk measure reported in Table 1 where the standard deviation under National was 19.4 percent compared to 23.2 percent under Labour (or 15.1 percent compared to 20.2 percent based on logarithmic returns). Table 5 examines the risk by term in office and highlights very high volatility of three consecutive terms in office from 1984 through to 1993 when the economy was sharply adjusting to the new deregulated environment. In addition to total and systematic risk measures, we also conduct GARCH analysis[5] which tests for volatility clustering in relation to the election cycle. The results suggest that when the

[5] These results are not included for space reasons but are available from the authors on request.

National Party is in government, stock returns have slightly lower risk, and this is particularly noticeable for the smaller firms sample.

Table 5 here

We also assess the performance of industrial sectors in New Zealand stocks in relation to the political cycle. It is useful to make this analysis in order to broaden the analysis of how the type of firm relates to the political cycle and to determine whether the National party premium is pervasive across sectors. In Table 6, Panel A we report how seven industrial sectors performed under each of the 13 governments that formed during the 1972-2010 period and report sector returns by party and also break this down into small and large firm effects. The results show that the 'National party premium' is present in four of the seven sectors. There are insignificant differences during the Property and Investment sectors, while the Energy sector firms enjoy significantly higher returns under Labour. In the test of larger firms and sector performance, the National party premium is significant in only the Services sector. In the smaller firm sample, the National party premium holds in five of the seven sectors but Energy sector firms outperform during Labour governments. Panel B presents the same sector analysis using logarithmic returns, the main differences is that the National party premium is now persists in six of the seven sectors in the All Firms and Small Firms samples, and is evident in the Goods, Services, Investment and Finance sectors for larger firms.

Table 6 here

In a further robustness test, we reclassify stocks into size categories based on the Fama and French (1993) SMB (small minus big) portfolio method, where the largest 30 percent and the smallest 30 percent of firms by capitalisation in a particular calendar year make up the two portfolios of stocks. We then rerun equations 2 to 5. The results show the same pattern as reported when the sample is split on the median capitalization by year[6]. Small firms exhibit a significantly positive National party premium, however there is no significant difference in systematic risk for small firms between the two

[6] These results are not included for space reasons but are available from the authors on request.

governments. Also of interest is that the smallest 30% firms perform significantly worse in the deregulatory period compared to the largest 30% of firms. This may indicate that these smallest firms found it harder to adapt to the more competitive post-deregulation environment where, for instance, protection from cheap imports and subsidies were heavily cut back.

Overall, our results are consistent with a number of other studies that show political cycles tend to show up more in the performance of small capitalisation firms. Work that notes this effect include Hensel and Ziemba (1995), Johnson, Chittenden, and Jensen (1999), Booth and Booth (2003) and Santa Clara and Valkanov (2003).

4. Conclusions

This paper is one of the few studies outside of the U.S. that examines the relationship between left- and the right-wing political cycles using firm level stock returns data. The advantage in using firm level data, rather than index data, lies in its usefulness in exploring how political cycles relate to factors such as firm size and firm type and their interaction with macroeconomic and other factors.

With this data we show a right-of-centre 'National party premium' exists in New Zealand over the period 1972-2010 and this is largely driven by small firms who perform particularly poorly during the left-of-centre Labour terms in government. This contrasts sharply to the U.S. findings of a left-of-centre 'Democrat premium' that is predominantly driven by higher returns in smaller U.S. firms during left-of-centre governments. So there is a puzzle, where small firms prosper under left-of-centre Democratic presidencies in the U.S. but in New Zealand small firms struggle during terms controlled by left-of-centre Labour governments. The puzzle is at least partially resolved by the realisation that small U.S. firms as a whole have often out-performed larger firms while in New Zealand smaller firms have on average underperformed larger firms in the economy.

Why there is such a difference in small firm performance between the two countries is an area for further enquiry. However in this paper we find some evidence that smaller firms were less able to cope with a range of factors that include the dramatic cut back in the inflation rate (relative deflation) in New Zealand between 1987 - 1989 when annualised inflation fell from 17.4 percent to 4.3 percent. They also could not cope well with tight credit conditions which we proxy with credit default spreads. When credit default swaps spreads increased, particularly around 1974, 1985-1987, and 2007, small firm performance suffered. Moreover, they were less able to cope with the deregulation of the New Zealand economy that begun in late 1984, when New Zealand shifted from being a heavily protected and subsidized economy to one of the most open economies in the world, with free and floating exchange rates and interest rates. The results are also consistent with Pastor and Veronesi's (2012) model of the relationship between financial markets and government policy settings. They show that there can be serious financial market reactions to swings in government policy if the changes are unanticipated or difficult to adjust to. New Zealand's economic experience is a graphic illustration of this hypothesis.

This research is of interest to policymakers. During the period examined there were several instances of sharp shifts in regulation and policy and it appears that smaller firms in particular found it difficult to adapt to this fast changing environment. New Zealand's three -year political term may encourage newly formed governments to implement relatively fast moving shifts in policy where a more reasoned and steady approach would be warranted.

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Table 1. Summary Statistics

This table reports summary statistics of monthly percentage and logarithmic based returns for firms listed on the New Zealand stock exchange (NZSX) over the period from 1972-2011 categorized by size (relative capitalization) and political cycle. Two methods categorize firms size; first, split on median market capitalization in the given year, and second, split on the top and bottom 30% based on capitalization in the given year.

Panel A: Summary statistics based on firm size							
		Percentage Returns			**Logarithmic Returns**		
	Number of observations	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation
All firm-month observations	79,889	0.0209	0.0000	0.214	0.0053	0.0000	0.179
Market return (NZSX All Index value weighted)	456	0.0054	.0059	0.050	0.0041	0.0055	0.054
Large Firms (based on median firm size)	39,829	0.0255	0.0053	0.182	0.0152	0.0052	0.138
Large Firms (30% largest firms)	24,175	0.0261	0.0080	0.185	0.0163	0.0080	0.135
Small Firms (based on median firm size)	40,060	0.0163	0.0000	0.242	-0.0045	0.0000	0.211
Small Firms (30% smallest firms)	24,174	0.0118	0.0000	0.252	-0.0130	0.0000	0.235
Panel B: Summary statistics based on political cycle and firm size							
National	39,903	0.0262	0.0000	0.194	0.0144	0.0000	0.151
Labour	39,986	0.0156	0.0000	0.232	-0.0037	0.0000	0.202
National - Large Firm (based on median firm size)	19,871	0.0270	0.0091	0.147	0.0195	0.0091	0.114
Labour - Large Firm (based on median firm size)	19,958	0.0240	0.0000	0.212	0.0109	0.0000	0.159
National - Small Firm (based on median firm size)	20,032	0.0254	0.0000	0.232	0.0092	0.0000	0.180
Labour - Small Firm (based on median firm size)	20,028	0.0072	0.0000	0.251	-0.0182	0.0000	0.237
National - Large Firm (based on 30% largest firms)	12,073	0.0269	0.0108	0.147	0.0199	0.0108	0.110
Labour - Large Firm (based on 30% largest firms)	12,102	0.0252	0.0039	0.219	0.0127	0.0039	0.156
National - Small Firm (based on 30% smallest firms)	12,107	0.0231	0.0000	0.238	0.0042	0.0000	0.198
Labour - Small Firm (based on 30% smallest firms)	12,067	0.0004	0.0000	0.265	-0.0303	0.0000	0.267

Table 2. Summary firm size statistics by term and sector

Panel A presents number of firms and summary firm size statistics by election term for the sample from 1972 through to 2010. Firm sector shown in Panel B is based on the NZX sector classifications. Election term is sourced from www.elections.org.nz.

Panel A: Summary size statistics by term							
Prime Minister	Party	Term	Observations	Mean Capitalization ($000)	Median ($000)	Maximum ($000)	Minimum ($000)
Kirk/Rowling	Labour	12/72 to 11/75	257	8,895	2,576	263,949	16
Muldoon	National	12/75 to 11/78	260	9,458	3,360	225,064	44
Muldoon	National	12/78 to 11/81	257	17,700	5,358	836,927	84
Muldoon	National	12/81 to 7/84	261	38,403	11,128	1,367,884	102
Lange	Labour	8/84 to 8/87	378	111,054	21,126	5,336,921	281
Lange/Palmer/Moore	Labour	9/87 to 10/90	333	123,950	14,309	5,409,233	55
Bolger	National	11/90 to 11/93	192	213,368	31,522	10,865,200	129
Bolger	National	12/93 to 10/96	190	321,483	49,215	13,964,144	540
Bolger/Shipley	National	11/96 to 11/99	154	391,260	69,415	16,311,325	493
Clark	Labour	12/99 to 7/02	163	375,120	74,815	16,248,465	432
Clark	Labour	8/02 to 9/05	187	414,184	83,348	12,491,218	40
Clark	Labour	10/05 to 11/08	178	483,876	78,591	11,782,509	310
Key	National	12/08 to 12/10	145	407,227	82,339	8,056,339	320
Panel B: Summary size statistics by sector							
Primary			183	166,976	11,972	6,825,483	16
Energy			36	431,597	47,772	5,593,350	82
Goods			162	150,067	15,725	8,056,339	39
Property			62	138,176	43,751	2,166,259	22
Services			206	241,639	13,854	16,311,325	55
Investment			93	140,037	22,714	5,336,921	120
Finance			55	109,682	19,800	2,014,915	96

Table 3. Political cycles and firm performance

New Zealand stock market monthly returns during term in office from December 1972 to December 2010. Large (small) firms are split on median market capitalization of any given year. Panels B and C report the results from regression equation (2): $r_{t+1} = \alpha + \beta_1 N_t + \varepsilon_{t+1}$ where r_{t+1} is stock monthly return, N_t is the dummy variable of 1 if National is in office, otherwise 0, ε_{pt+1} is the error term. Panel D reports the results from regression equation: $r_{t+1} = \alpha + \beta_1 Deregulation_t + \varepsilon_{t+1}$ where *Deregulation* is a dummy variable that takes a value of 1 after the major deregulation of the economy in late 1984, otherwise 0.

Panel A: Firm performance during political terms in office

			Percentage Returns			**Logarithmic Returns**		
Prime Minister	Party	Term	Full Sample Mean Return	Large Firm Mean Return	Small Firm Mean Return	Full Sample Mean Return	Large Firm Mean Return	Small Firm Mean Return
Kirk/Rowling	Labour	12/72 to 11/75	0.020	0.027	0.013	0.005	0.011	-0.002
Muldoon	National	12/75 to 11/78	0.020	0.019	0.021	0.014	0.015	0.013
Muldoon	National	12/78 to 11/81	0.036	0.039	0.033	0.027	0.031	0.023
Muldoon	National	12/81 to 7/84	0.032	0.038	0.026	0.020	0.028	0.013
Lange	Labour	8/84 to 8/87	0.051	0.064	0.037	0.028	0.043	0.012
Lange/Palmer/Moore	Labour	9/87 to 10/90	-0.005	0.008	-0.017	-0.043	-0.014	-0.072
Bolger	National	11/90 to 11/93	0.054	0.044	0.064	0.029	0.033	0.025
Bolger	National	12/93 to 10/96	0.007	0.012	0.002	-0.003	0.006	-0.012
Bolger/Shipley	National	11/96 to 11/99	0.011	0.010	0.013	0.002	0.005	-0.001
Clark	Labour	12/99 to 7/02	0.004	0.012	-0.003	-0.006	0.007	-0.019
Clark	Labour	8/02 to 9/05	0.017	0.020	0.013	0.008	0.017	-0.001
Clark	Labour	10/05 to 11/08	-0.002	0.000	-0.004	-0.014	-0.004	-0.025
Key	National	12/08 to 12/10	0.012	0.017	0.008	0.000	0.011	-0.011

Panel B: Difference in firm performance under National and Labour terms in office

	Percentage returns			Logarithmic Returns		
	Full Sample Mean Return	Large Firms Mean Return	Small Firms Mean Return	Full Sample Mean Return	Large Firms Mean Return	Small Firms Mean Return
National	0.027	0.027	0.025	0.014	0.020	0.010
Labour	0.016	0.024	0.007	-0.004	0.011	-0.018
Premium (National - Labour)	0.011	0.003	0.018	0.018	0.009	0.028
t-value	7.00***	1.66*	7.52***	14.30***	6.23***	13.06***

Panel C: Firm performance with Labour's Lange/Palmer/Moore 1987-1990 political term excluded

	Percentage returns			Logarithmic Returns		
	All Firms Mean Return	Large Firms Mean Return	Small Firms Mean Return	All Firms Mean Return	Large Firms Mean Return	Small Firms Mean Return
National	0.027	0.027	0.026	0.015	0.020	0.010
Labour	0.021	0.028	0.014	0.006	0.017	-0.005
Premium (National - Labour)	0.006	-0.001	0.012	0.009	0.003	0.014
t-value	3.77***	-0.31	5.03***	7.06***	2.01**	7.21***

Panel D: Impact of 1984 deregulation on firm performance under Labour and National

	Full Sample Mean Return	Large Firms Mean Return	Small Firms Mean Return	Large Firms under National Mean Return	Small Firms under National Mean Return	Large Firms under Labour Mean Return	Small Firms under Labour Mean Return
Pre deregulation	0.027	0.031	0.024	0.032	0.027	0.028	0.014
Post deregulation	0.017	0.022	0.012	0.021	0.023	0.023	0.005
Difference (Post - Pre)	-0.010	-0.009	-0.012	-0.011	-0.004	-0.005	-0.009
t-value	-6.95***	-4.71***	-5.14***	-5.27***	-1.21	-1.25	-2.57**

The symbols *,**, and *** denote statistical significance at the 10%, 5%, 1% levels, respectively.

Table 4. Firm performance and political cycles – regression analysis

This table reports the results from regression equations (2), (3), (4) and (5) which are given below in each panel heading. In each equation r_{t+1} is the monthly stock return, N_t is a dummy variable with a value of 1 if the National Party is in office, otherwise 0; r_{mt+1} is the market return; α is the intercept, β_1 is the difference of monthly stock returns between National and Labour, β_2 is the market beta in Panel B and the market beta during Labour in Panel C. The variable δ_{pM} is the difference in market beta between National and Labour terms in office. ΦX measures the effects from a number of economic variables including dividend yield (LogDY); Term_Spread which is the difference between short and long term debt; Default_Spread, which is the spread between commercial paper yields and short term government debt; and RRt, which is the difference between short term government debt yields and the 12-month rolling average yield on the same instrument. Deregulation is a dummy 1 the term after the 1984 deregulation, otherwise 0; and Crash is a dummy 1 for the 1987-1990 'crash' term in office, ε_{pt+1} is the error term.

Panel A: Dummy Regression of political cycles *Equation (2):* $r_{t+1} = \alpha + \beta_1 N_t + \varepsilon_{t+1}$

	All Firms Coefficient	t-value		All Firms Coefficient	t-value		Large Firms Coefficient	t-value		Small Firms Coefficient	t-value	
α	0.016	13.43	***	0.027	25.92	***	0.024	16.02	***	0.007	4.06	***
β_1	0.011	7.00	***				0.003	1.66	*	0.018	7.52	***
Small*Labour				-0.020	-9.65	***						
Large*Labour				-0.003	-1.66	*						
Small*National				-0.002	-0.86							
Adjusted R^2	0.0006			0.0014			0.0000			0.0014		

Panel B: CAPM based returns assuming constant beta across political cycles *Equation (3):* $r_{t+1} = \alpha + \beta_1 N_t + \beta_2 r_{m,t+1} + \varepsilon_{t+1}$

	All Firms Coefficient	t-value		All Firms Coefficient	t-value		Large Firms Coefficient	t-value		Small Firms Coefficient	t-value	
α	0.016	13.89	***	0.023	22.30	***	0.025	16.55	***	0.008	4.28	***
β_1	0.006	4.15	***				-0.002	-1.06		0.014	6.00	***
β_2	0.431	27.13	***	0.431	27.16	***	0.495	24.03		0.368	15.25	***
Small*Labour				-0.016	-7.58	***						
Large*Labour				0.001	0.72							
Small*National				-0.002	-0.86							
Adjusted R^2	0.0136			0.0144			0.0237			0.0088		

Panel C: Conditional CAPM returns where beta varies across political cycles *Equation (4):* $r_{t+1} = \alpha + \beta_1 N_t + (\beta_2 + \delta N_t) r_{m,t+1} + \varepsilon_{t+1}$

	All Firms Coefficient	t-value		All Firms Coefficient	t-value		Large Firms Coefficient	t-value		Small Firms Coefficient	t-value	
α	0.016	13.91	***	0.023	22.59	***	0.025	16.55	***	0.008	4.29	***
β_1	0.007	4.38	***				-0.005	-0.83		0.015	6.08	***
β_2	0.452	21.37	***	0.452	21.40	***	0.522	18.40	***	0.382	12.21	***
δN_t	-0.059	-1.91	*	-0.059	-1.91	*	-0.078	-2.04	**	-0.039	-0.80	
Small*Labour				-0.016	-7.74	***						
Large*Labour				0.001	0.54							
Small*National				-0.002	-0.86							
Adjusted R^2	0.0137			0.0144			0.0239			0.0088		

Panel D: Conditional CAPM and Macroeconononomic variables. *Equation (5):* $r_{t+1} = \alpha + \beta_1 N_t + (\beta_2 + \delta N_t) r_{m,t+1} + \varepsilon_{t+1}$

	All Firms Coefficient	t-value		All Firms Coefficient	t-value		Large Firms Coefficient	t-value		Small Firms Coefficient	t-value	
α	0.015	13.26	***	0.024	21.22	***	0.023	16.34	***	0.008	4.17	***
β_1	0.008	4.99	***				0.002	1.02		0.015	5.37	***
β_2	0.444	20.51	***	0.444	20.54	***	0.520	17.73	***	0.367	11.61	***
δN_t	-0.049	-1.53		-0.049	-1.54		-0.069	-1.79	*	-0.028	-1.55	
logDY	-0.016	-2.44	**	-0.016	-2.45	**	-0.015	-1.82	*	-0.017	-1.68	*
Term_Spread	-0.043	-0.85		-0.043	-0.85		-0.214	-3.18	***	0.126	1.66	*
Default_Spread	0.056	1.36		0.056	1.36		0.150	2.88	***	-0.037	-0.58	
RRt	-0.089	-1.90	*	-0.089	-1.90	*	-0.221	-3.47	***	0.043	0.63	
Small*Labour				-0.018	-8.09	***						
Large*Labour				-0.001	-0.41							
Small*National				-0.002	-0.87							

Adjusted R^2	0.0138			0.0145			0.0245			0.0089		
Panel E: Conditional CAPM, macroeconomic variables, deregulation and crash dummies							*Equation:* $r_{t+1} = \alpha + \beta_1 N_t + (\beta_2 + \delta N_t) r_{m,t+1} + \Phi X_t + \varepsilon_{t+1}$					
	All Firms Coefficient	t-value		All Firms Coefficient	t-value		Large Firms Coefficient	t-value		Small Firms Coefficient	t-value	
α	0.030	12.94	***	0.038	16.44	***	0.038	11.05	**	0.023	7.12	***
β_1	0.007	3.94	***				0.002	1.01		0.011	4.17	***
β_2	0.418	18.45	***	0.418	18.48	***	0.500	16.17	***	0.336	10.23	***
δN_t	-0.042	-1.30		-0.042	-1.30		-0.067	-1.72	*	-0.016	-0.31	
logDY	-0.049	-5.00	***	-0.049	-5.01	***	-0.058	-4.24	***	-0.041	-2.88	***
Term_Spread	-0.063	-1.22		-0.063	-1.22	s	-0.213	-3.16	***	0.086	1.11	
Default_Spread	-0.242	-4.78	***	-0.242	-4.78	***	-0.164	-2.34	**	-0.312	-4.37	***
RRt	-0.134	-2.78	***	-0.133	-2.77	***	-0.231	-3.64	***	-0.037	-0.51	
Deregulation	-0.022	-6.71	***	-0.022	-6.71	***	-0.025	-5.36	***	-0.019	-4.13	***
Crash	-0.005	-1.18		-0.005	-1.18		0.003	0.70		-0.013	-1.94	*
Small*Labour				-0.016	-7.43	***						
Large*Labour				0.001	0.45							
Small*National				-0.002	-0.86							
Adjusted R^2	0.0146			0.0154			0.0256			0.0096		

The symbols *,**, and *** denote statistical significance at the 10%, 5%, 1% levels, respectively.

Table 5. Differences of monthly volatility under National and Labour parties

Large (small) firms have a market capitalization greater (less) than the median capitalization of any given year. The sample period is from 1972-2010. Election term is sourced from www.elections.org.nz.

Prime Minister	Party	Term	Standard Deviation All Firms	Standard Deviation Large Firms	Standard Deviation Small Firms
Kirk/Rowling	Labour	12/72 to 11/75	0.215	0.235	0.194
Muldoon	National	12/75 to 11/78	0.159	0.095	0.204
Muldoon	National	12/78 to 11/81	0.153	0.140	0.164
Muldoon	National	12/81 to 7/84	0.178	0.175	0.180
Lange	Labour	8/84 to 8/87	0.278	0.277	0.278
Lange/Palmer/Moore	Labour	9/87 to 10/90	0.320	0.272	0.361
Bolger	National	11/90 to 11/93	0.304	0.185	0.387
Bolger	National	12/93 to 10/96	0.183	0.175	0.191
Bolger/Shipley	National	11/96 to 11/99	0.166	0.101	0.211
Clark	Labour	12/99 to 7/02	0.153	0.098	0.192
Clark	Labour	8/02 to 9/05	0.140	0.077	0.181
Clark	Labour	10/05 to 11/08	0.162	0.080	0.215
Key	National	12/08 to 12/10	0.163	0.122	0.196

Table 6. Political cycles and sector performance

This table summaries New Zealand sector total monthly percentage (Panel A) and logarithmic (Panel B) returns during each term in office from 1972-2010. Firm sector is based on the NZX sector classifications. Election term is sourced from www.elections.org.nz. The t-values are based on the differences in mean returns under each political party by sector. A positive (negative) coefficient indicates a National (Labour) party premium in the sector. Large (small) firms have a market capitalization greater (less) than the median capitalization of any given year.

Panel A: Political cycle and sector percentage returns

Prime Minister	Party	Term	Primary	Energy	Goods	Property	Services	Investment	Finance
Kirk/Rowling	Labour	12/72 to 11/75	0.021	0.033	0.016	0.065	0.016	0.061	0.014
Muldoon	National	12/75 to 11/78	0.028	0.006	0.016	0.007	0.020	0.014	0.021
Muldoon	National	12/78 to 11/81	0.039	0.052	0.034	0.043	0.032	0.044	0.043
Muldoon	National	12/81 to 7/84	0.022	0.020	0.034	0.041	0.037	0.045	0.037
Lange	Labour	8/84 to 8/87	0.047	0.062	0.044	0.064	0.046	0.060	0.064
Lange/Palmer/Moore	Labour	9/87 to 10/90	0.001	0.064	-0.006	-0.024	-0.005	-0.006	-0.017
Bolger	National	11/90 to 11/93	0.069	0.044	0.041	0.035	0.063	0.047	0.038
Bolger	National	12/93 to 10/96	-0.002	0.012	0.003	0.008	0.013	0.009	0.010
Bolger/Shipley	National	11/96 to 11/99	0.002	0.006	0.014	0.000	0.016	0.009	0.041
Clark	Labour	12/99 to 7/02	0.007	0.019	0.011	0.012	-0.001	-0.003	-0.004
Clark	Labour	8/02 to 9/05	0.011	0.027	0.013	0.017	0.016	0.019	0.026
Clark	Labour	10/05 to 11/08	-0.005	0.002	-0.008	0.024	-0.002	-0.001	-0.008
Key	National	12/08 to 12/10	0.016	0.000	0.018	0.009	0.020	0.003	-0.010
All Firms: Premium (National - Labour)			0.010	-0.019	0.010	-0.002	0.017	0.009	0.018
t-value			2.90***	-2.47***	3.88***	-0.27	6.54***	1.42	3.05***
Large Firms: Premium (National - Labour)			-0.001	-0.013	0.002	-0.007	0.015	-0.003	0.009
t-value			-0.31	-1.50	0.77	-1.05	4.15***	-0.33	1.39
Small Firms: Premium (National - Labour)			0.022	-0.031	0.019	0.006	0.020	0.019	0.027
t-value			3.56***	-2.11**	4.39***	0.50	5.10***	2.17**	2.92***

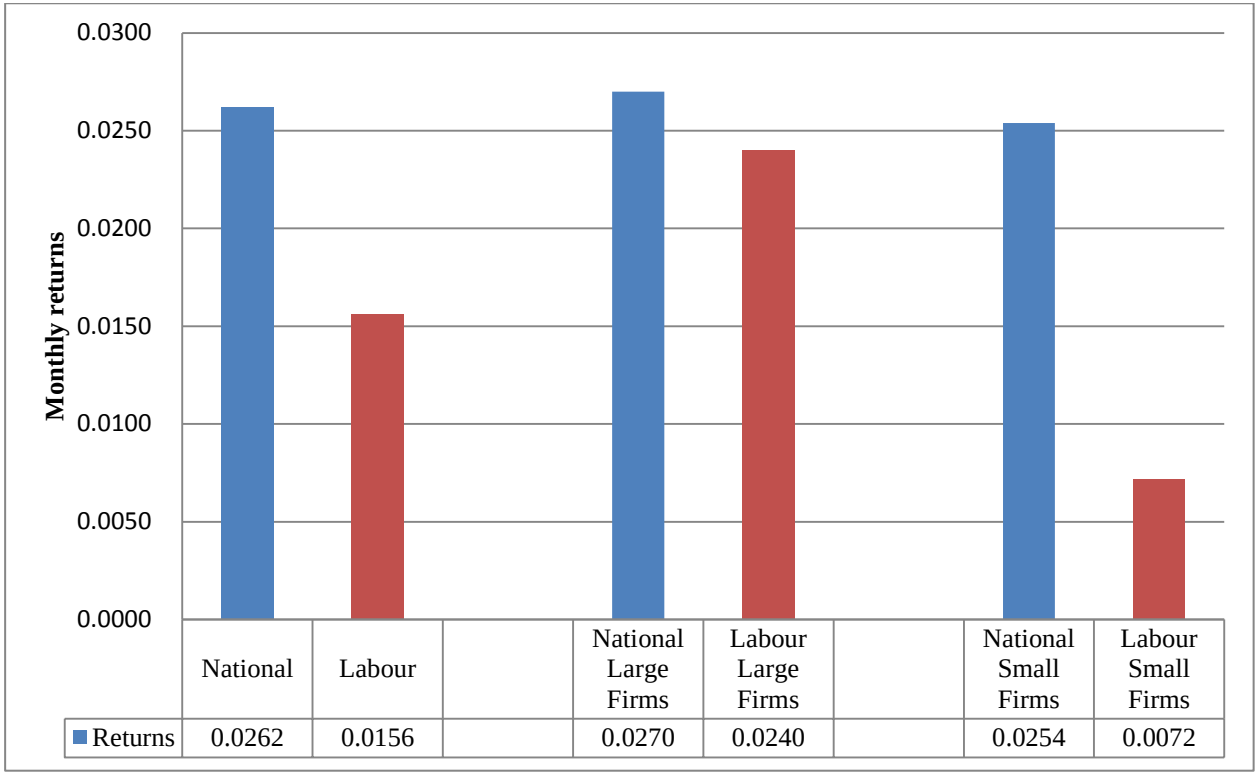
Panel B: Political cycle and sector logarithmic returns

Prime Minister	Party	Term	Primary	Energy	Goods	Property	Services	Investment	Finance
Kirk/Rowling	Labour	12/72 to 11/75	0.007	0.010	0.003	0.019	0.003	0.009	-0.002
Muldoon	National	12/75 to 11/78	0.018	-0.004	0.013	-0.001	0.014	0.011	0.014
Muldoon	National	12/78 to 11/81	0.031	0.034	0.023	0.032	0.025	0.039	0.031
Muldoon	National	12/81 to 7/84	0.011	0.000	0.025	0.026	0.025	0.020	0.024
Lange	Labour	8/84 to 8/87	0.020	0.028	0.026	0.042	0.027	0.035	0.039
Lange/Palmer/Moore	Labour	9/87 to 10/90	-0.038	-0.012	-0.030	-0.078	-0.040	-0.052	-0.045
Bolger	National	11/90 to 11/93	0.036	0.025	0.025	0.001	0.038	0.024	0.017
Bolger	National	12/93 to 10/96	-0.014	0.005	-0.006	0.001	0.004	-0.004	0.003
Bolger/Shipley	National	11/96 to 11/99	-0.008	0.002	0.002	-0.004	0.007	-0.001	0.018
Clark	Labour	12/99 to 7/02	-0.004	0.015	-0.001	0.006	-0.011	-0.020	-0.016
Clark	Labour	8/02 to 9/05	0.000	0.024	0.004	0.012	0.007	0.010	0.014
Clark	Labour	10/05 to 11/08	-0.015	-0.003	-0.019	0.007	-0.013	-0.015	-0.026
Key	National	12/08 to 12/10	-0.003	-0.005	0.002	0.005	0.011	-0.014	-0.027
All Firms: Premium (National - Labour)			0.017	-0.006	0.015	0.012	0.020	0.020	0.022
t-value			6.02***	-1.05	6.57***	2.17*	9.19***	3.88***	4.22***
Large Firms: Premium (National - Labour)			0.004	-0.008	0.009	0.002	0.013	0.015	0.018
t-value			1.39	-1.48	3.26***	0.33	5.26***	2.32**	3.00***
Small Firms: Premium (National - Labour)			0.028	-0.006	0.024	0.030	0.028	0.035	0.029
t-value			5.78***	-0.41	6.32***	2.53**	8.06***	4.30***	3.50***

The symbols *,**, and *** denote statistical significance at the 10%, 5%, 1% levels, respectively.

Figure 1: Political Party, Firm Size, and Share market returns

New Zealand stock market monthly percentage returns during National and Labour terms in office from December 1972 to December 2010. Large (small) firms are split on median market capitalization of any given year.



	National	Labour		National Large Firms	Labour Large Firms		National Small Firms	Labour Small Firms
Returns	0.0262	0.0156		0.0270	0.0240		0.0254	0.0072